

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

THOMAS HODGE

Appl. No.: 09/778,144

Filed: February 7, 2001

For: HEAVY-LOAD TIRES HAVING A
RUBBER COMPOSITION THAT DELAYS
IRREGULAR WEAR



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: Examiner: Henry S. Hu
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) Group Art Unit: 1713
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: March 9, 2005

Mail Stop: Issue Fee
The Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**COMMENTS ON STATEMENT
OF REASONS FOR ALLOWANCE**

Sir:

In the Examiner's statement of reasons for allowance attached to the Notice of Allowance dated January 6, 2005, there are a few statements for which Applicant wishes to provide clarification:

In section 1 on page 2, the Examiner states "... Claim 1 was amended to incorporate all the limitations from Claims 2-7 and 10-12 so as to narrow down the diene elastomeric matrix, the functional groups and using silica as [white] filler." The Examiner similarly states in Section 6 on pages 3 and 4,

"[t]his parent claim [1] has been amended to carry all the limitations from **Claims 2-7 and 10-12** so as to narrow

down the issues of diene elastomer, functional groups and white filler as following “a functionalized diene elastomer co-polymer formed from a conjugated diene monomer and a vinyl aromatic compound, the co-polymer having a glass transition temperature between -70°C and -20°C and a mass content of vinyl-aromatic units of 10-50 %” for **diene elastomer**, “the functional group being selected from the group consisting of a silanol group and a polysiloxane block having a silanol end” for **functional group** and ; “silica having a CTAB specific area of $80\text{-}260\text{ m}^2/\text{g}$ ” for **white filler**.”

Applicant respectfully points out that Claims 2-4 were incorporated into base Claim 1, along with the limitation that the silica have a CTAB specific surface area from $80\text{ m}^2/\text{g}$ to $260\text{ m}^2/\text{g}$. Claims 5, 6, 7 and 10-12 were cancelled but were not incorporated into Claim 1.

In Section 7 on pages 4 and 5, the Examiner states that “Araki’s **coupled** copolymer is only obtained by first treating with lithium to activate the end of chain and then coupling the chain ends of the functionalized polymer, **it is therefore no more an endgroup-functionalized polymer.**” The Examiner also states that

“Micouin’s modified copolymer is only obtained from being **coupled and/or starred or else functionalized with a coupling agent and/or starring or functionalizing agent** (column 8, line 48-50). It is only a general statement since there is no disclosure about what is the modification on endgroups of polymers. It is noted that **silica coupling agent and/or silica covering agent such as alkoxysilanes may be added in the polymer’s composition but not in the end of polymerization.**”

Applicant notes that the present invention is distinguishable over ARAKI and MICOUIN for the reasons provided on pages 6 and 7 of the Amendment submitted on June 29, 2004.

In Section 8 on page 5, the Examiner states that “... Vasseur is silent of the claimed silanol function on the end groups of polymers. Therefore, a motivation to

connect between Vasseur and Araki is lacking to apply the cross-linked diene rubber composition for making **tread of tire**.” The Examiner also states that

“the secondary **Agostini** reference only teaches that silica with the claimed CTAB can be used in the tire manufacture to function properly as a filler; while the other secondary **Loiselle** reference only teaches that a heat curable liquid silicone rubber composition comprising vinyl-containing polydiorganosiloxane and organohydrogensiloxane will improve hydrocarbon oil resistance. Therefore, either Agostini or Loiselle cannot fix the deficiency on Claim 1 over Araki or Micouin.”

Applicant notes that the present invention is distinguishable over VASSEUR, AGOSTINI and LOISELLE for the reasons provided on pages 8-10 of the Amendment submitted on June 29, 2004.

In Section 8 on page 6, the Examiner states that “the present invention has shown in examples along with some comparative examples for making **a tread** specifically for **a heavy-vehicle tire** (see pages 18-27 for **examples 1-2** along with its **Tables 1-5**).” Applicant notes that the invention is not limited to the Examples contained within the specification.

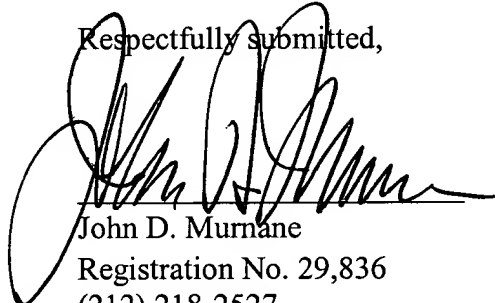
In Section 10 on page 7, the Examiner states that

“[t]he three key issues, regarding the issues of diene elastomer, functional groups and white filler as following “a functionalized diene elastomer co-polymer formed from a conjugated diene monomer and a vinyl-aromatic compound, the co-polymer having a glass transition temperature between -70°C and -20°C and a mass content of vinyl-aromatic units of 10-50%” for **diene elastomer**, “the functional group being selected from the group consisting of a silanol group and a polysiloxane block having a silanol end” for **functional group** and ; “silica having a CTAB specific area of 80-260 m^2/g ” for **white filler**, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.”

Applicant notes that the invention is distinguishable over the references cited for the reasons provided on pages 5-10 of the Amendment submitted on June 29, 2004.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,



John D. Murnane
Registration No. 29,836
(212) 218-2527

Victor Tsu
Registration No. 46,185
(212) 218-2264

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 0112-3801
Facsimile: (212) 218-2200